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IBM Docket No. FR919990111US1

Amendments to the Claims:

1. A method of transmitting a loopback cell of a connection established between a source ATM device and a destination ATM device of an ATM network, said loopback cell being returned at one of at least one to one of the switching nodes located on the connection route, said loopback cell entering said switching node by a an input port P1 of an input adapter B1, before being switched to an output adapter B2 as would a normal cell of said connection, and being then switched backward to said input adapter B1 and exiting the switching node by said input port P1 of said input adapter B1 instead of an output port P2 of said output adapter B2 as would a normal cell of said connection,

said method comprising the steps of;

detecting in said output adapter B2 whether an incoming cell includes a loopback condition, and if so

appending to said incoming cell a specific routing label indicating that the incoming cell is a cell to be returned in on the connection; and

using said routing label by the a protocol engine of said output adapter B2 to transmit said cell through the switch engine back to said input adapter B1, then over said ATM network from said input port P1 of said input adapter B1 like a normal cell traveling on the connection in the opposite direction.

2. The method according to claim 1, wherein said specific routing label is appended to said incoming loopback cell only if a loop control bit is set by a the control point of said switching node in said output adapter B2.

PATENT
IBM Docket No. FR919990111US1

3. The method according to claim 2, wherein said specific routing label is the an identification of said output port **P2** to indicate to the protocol engine of said output adapter **B2** used as an output adapter that said incoming loopback cell should will be treated considered as a normal cell of said connection entering into said output port **P2** as if it were traveling on the connection in the opposite direction.
4. The method according to claim 3, wherein a loopback flag is appended to said incoming loopback cell if said loop control bit is set in order to indicate to the protocol engine of said output adapter **B2** used as output adapter that said identification of said output port **P2** has to be appended to said incoming loopback cell.
5. The method according to claim 4, wherein said incoming loopback cell to be looped back is transferred by said protocol engine of said output adapter to an internal port of said output adapter **B2**, said internal port being only used for incoming loopback cells when said loopback flag is appended to said incoming loopback cell.
6. The method according to claim 5, wherein said internal port is used as an a second input port of said output adapter **B2** used as an input adapter for receiving said incoming loopback cell to be looped back, which cell is treated considered as a normal cell of the connection entering said output port **P2** used as input port in view of said identification of said output port **P2** appended thereto.
7. A system for transmitting a loopback cell of a connection established between a source ATM device and a destination ATM device of an ATM network, said loopback cell being returned at one of at least one to one of the switching nodes located on the connection route, said loopback cell entering said switching node by a an input port **P1** of an input adapter **B1**, before being switched to the an output adapter **B2** as would a normal cell of said connection, and being then switched backward

PATENT
IBM Docket No. FR919990111US1

to said input adapter **B1** and exiting the switching node by said input port **P1** of said input adapter **B1** instead of an output port **P2** of said output adapter **B2** as would a normal cell of said connection,

said system comprising:

means for detecting in said output adapter **B2** whether an the incoming cell includes a loopback condition; and if so

means for appending to the any incoming cell which includes said loopback condition a specific routing label indicating that the incoming cell is a cell to be returned in on the connection; and

means for using said routing label by a the protocol engine of said output adapter **B2** to transmit said cell through the switch engine back to said input adapter **B1**, then over said ATM network from said input port **P1** of said input adapter **B1** like a normal cell traveling on the connection in the opposite direction.

8. The system according to claim 7, wherein said specific routing label is appended to said incoming loopback cell only if a loop control bit is set by a the control point of said switching node in said output adapter **B2**.

9. The system according to claim 8, wherein said specific routing label is the an identification of said output port **P2** to indicate to the protocol engine of said output adapter **B2** used as an output adapter that said incoming loopback cell should will be treated considered as a normal cell of said connection entering into said output port **P2** as if it were traveling on the connection in the opposite direction.

PATENT
IBM Docket No. FR919990111US1

10. The system according to claim 9, wherein a loopback flag is appended to said incoming loopback cell if said loop control bit is set in order to indicate to the protocol engine of said output adapter **B2** used as output adapter that said identification of said output port **P2** has to be appended to said incoming loopback cell.
11. The system according to claim 10, wherein said incoming loopback cell to be looped back is transferred by said protocol engine of said output adapter to an internal port of said output adapter **B2**, said internal port being only used for incoming loopback cells when said loopback flag is appended to said incoming loopback cell.
12. The system according to claim 11, wherein said internal port is used as an a second input port of said output adapter **B2** used as an input adapter for receiving said incoming loopback cell to be looped back, which cell is treated considered as a normal cell of the connection entering said output port **P2** used as input port in view of said identification of said output port **P2** appended thereto.